

FIRE DOORS & SHUTTERS

The Kinnear Mfg. Co.,
Columbus, Ohio U.S.A.

J. R. McNAUL & CO.
Louisville

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KINNEAR FIRE DOORS AND SHUTTERS

CATALOG No. 53

KINNEAR Doors and Shutters are intended for service and fire protection, ingeniously designed, constructed of the best material and assembled by competent and skilled mechanics. Adaptable to Buildings of all classes, Public Edifices of Classic Design, Modern Mercantile Buildings, Piers, Factories, Ware and Freight Houses.

In specifying and buying, too frequently the only element of consideration is that of first cost. The cost of maintenance, efficiency of the device, and reliability of manufacture, are equally important. The same careful thought should be exercised in the purchase of doors as in other matters; they are operated many times daily, and one that does not require frequent repairs, which operates with rapidity and ease, saves money, time and labor, will always be more satisfactory and ultimately the most economical.

Rolling Doors and Shutters are terms indicative of class, not quality, but the name of this Company prefixed, gives a new significance and carries with it the assurance of superior device.

The KINNEAR MANUFACTURING COMPANY COLUMBUS, OHIO, U. S. A.

BOSTON, MASS., 85 Water Street

PHILADELPHIA, PA., Wesley Bldg., 17th and Arch Sts.

SAN FRANCISCO, CAL., 517 Rialto Building

CHICAGO, ILL., 1860 C. & C. Bank Building

CLEVELAND, OHIO, 409 Union Building

DETROIT, MICH., 709 Ford Building

NEW YORK, 38 Park Place

AGENCIES

CINCINNATI, OHIO

KANSAS CITY, MO.

PITTSBURGH, PA.

INDIANAPOLIS, IND.

NEW ORLEANS, LA.

SPOKANE, WASH.

SEATTLE, WASH.

ATLANTA, GA.

ST. LOUIS, MO.

MEMPHIS, TENN.

LOS ANGELES, CAL.

DENVER, COLO.

ROCHESTER, N. Y.

MONTREAL, QUE.

WINNIPEG, CAN.

VANCOUVER, B. C.

J. F. WAGNER'S SONS CO.
LOUISVILLE, KY.

OUR efforts have been directed to producing sturdy, durable and efficient types. Easy and rapid operation of our doors is obtained by careful calculation to determine the size of springs employed in counterbalancing; the quality of steel of which the springs are made; the liberal use of annular roller and thrust ball-bearings, machine moulded gear and other refinements of this character.

In compactness, they effect economy in building construction, occupy neither valuable floor or wall space, nor do they offer obstruction, as they are overhead and out of the way.

By careful consideration of their use in designing buildings, the most advantageous arrangements will be obtainable. Problems of storage and transportation will be rendered less difficult; the handling of merchandise and freight facilitated, and greater floor areas made available.

Uninterrupted communication may be established between adjacent fire sections by the elimination of fire walls and the substitution of continuous double doors and column construction. The entire side of a building, if desired, may be converted into the equivalent of a single opening by a series of doors. Openings of excessive size may be successfully treated. Further, better installations will result, and erection made less expensive.

The following pages illustrate the more common application of doors and shutters. Drawings and other information furnished upon request.

Arrangement of Catalog

The catalog is divided into two sections.

First Section—Showing actual installations.

Second Section—Illustrating the types individually.

This section is sub-divided as follows:

Doors for openings in vertical shafts, corridors and room partitions.

Doors for openings in fire walls.

Doors and Shutters for openings in exterior walls.

The last two pages are schedules, giving clearance dimensions.

Catalog No. 52, describes non-automatic doors, adaptable to all classes of work.



FIRE DOORS AND SHUTTERS

This catalog is devoted exclusively to doors and shutters constructed under the supervision of the Underwriters' Laboratories, Inc., and are inspected and labelled at the factory by their representative.

The application of the several types is indicated on the following pages in their respective classification, as authorized. Frequently situations will be found where structural conditions of the building will not admit of strict adherence to the rules. In such instances the matter should be presented to the bureau having jurisdiction for recommendation. They may find that substitution of one type for another will be satisfactory, or a slight modification in the design of shutter, would not impair its quality as a fire retardent, and consequently, authorize its use.

In 1908 this company placed upon the market the first approved rolling doors and shutters under the trade name of "Abacus." The development of this type occupied more than five years. Numerous fire tests were made in this country and abroad, the effects carefully observed, and where indicated, the construction modified and efficiency demonstrated by further tests. Actual fires also contributed valuable experience which was most advantageously utilized.

The extensive use of this type has given ample opportunity for observation. It has fully met our expectation in efficiency as a fire retardent.

The Abacus types are superseded by the new types "Akbar," "Acme" and "Superior," which have been rendered more efficient by mechanical improvements; modifications of the automatic closing device, a re-arrangement of the counter-balance on entirely new principles, have resulted in greater reliability in automatic action, ease in restoration after automatic closure, and easier operation in normal service. In both types, when automatically closed, the curtain is impelled by the powerful starting force which diminishes immediately after the curtain is set in motion, thus making it close easily upon the sill.

They are not difficult to operate after they have closed automatically. The curtain is easily raised and will close again unless reset. Resetting is accomplished by raising the levers, inserting the new fusible element, then lifting the curtain rapidly. It requires but a moment of time and is done by a single person; is so simple that a mistake cannot be made through misunderstanding.

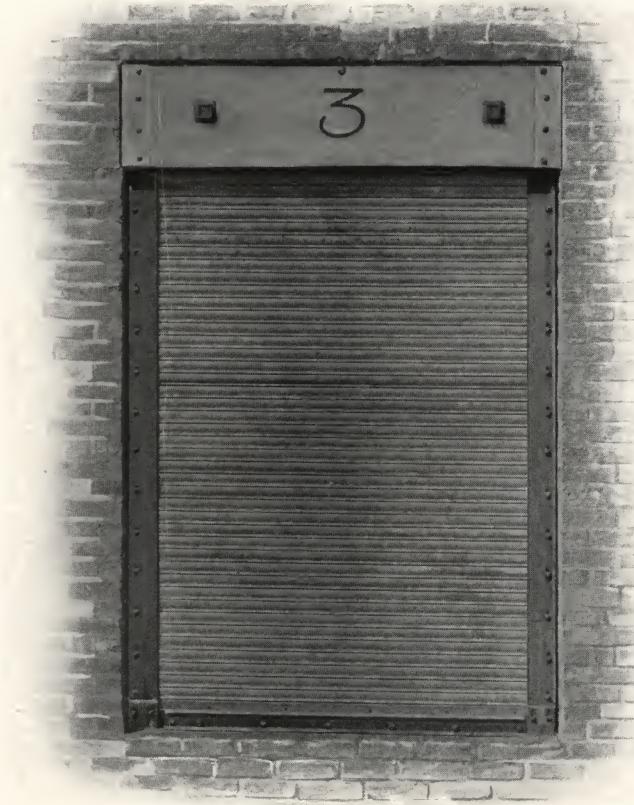


FIRE TESTS OF KINNEAR STEEL ROLLING DOORS AND SHUTTERS

THE UNDERWRITERS' LABORATORIES, INC.,
CHICAGO, ILL.

The samples were subjected to the standard test to ascertain the effect of fire of one hour duration with temperatures rapidly increasing to approximately 1,800 degrees Fahrenheit, and the sudden cooling by the application of a 7/8 stream of water, sixty-five pounds nozzle pressure for one minute and to determine the efficiency in the reduction of heat transmission and radiation.

The doors and shutters illustrated on the following pages are now included in the approved list issued by the Underwriters' Laboratories.



Before Test.

The above illustrations are reproductions from photos made at a test of the Kinnear Doors conducted at the Underwriters' Laboratories, Inc. The fire temperature was 1,880 degrees, the illustrations show the side of the door presented to the fire.

THE BRITISH FIRE PREVENTION COMMITTEE,
LONDON, ENGLAND.

Classified Kinnear Double Steel Rolling Fire Doors as full protection Sub-Class B.

In this classification the retardent is subjected to fire for a period of four hours with maximum temperature of 1,800 degrees Fahrenheit and a stream of water at sixty-five pounds nozzle pressure for a period of five minutes.

The retardent must successfully resist a passage of fire and water.

For full particulars of this and other tests of Kinnear Doors and Shutters, see reports issued by the Committee.



After Test.

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Hibernia Bank Building, San Francisco—All exterior openings are protected by Kinnear Steel Rolling Shutters affording security from fire and burglary not obtainable by other means.

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Views of Pacific Mutual Life Building, Los Angeles, Cal., illustrating the adaptability of Kinnear Shutters in classic architecture. Every exterior opening from basement to pent house is thus protected, the shutters and their operating mechanism are entirely concealed within the walls.



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No. 1. New-York Life Building, Chicago, Ill. Nos. 2 and 3. Corn Exchange Bank Building, Chicago, Ill. Views illustrating typical installations of Shutters for protection of window openings.

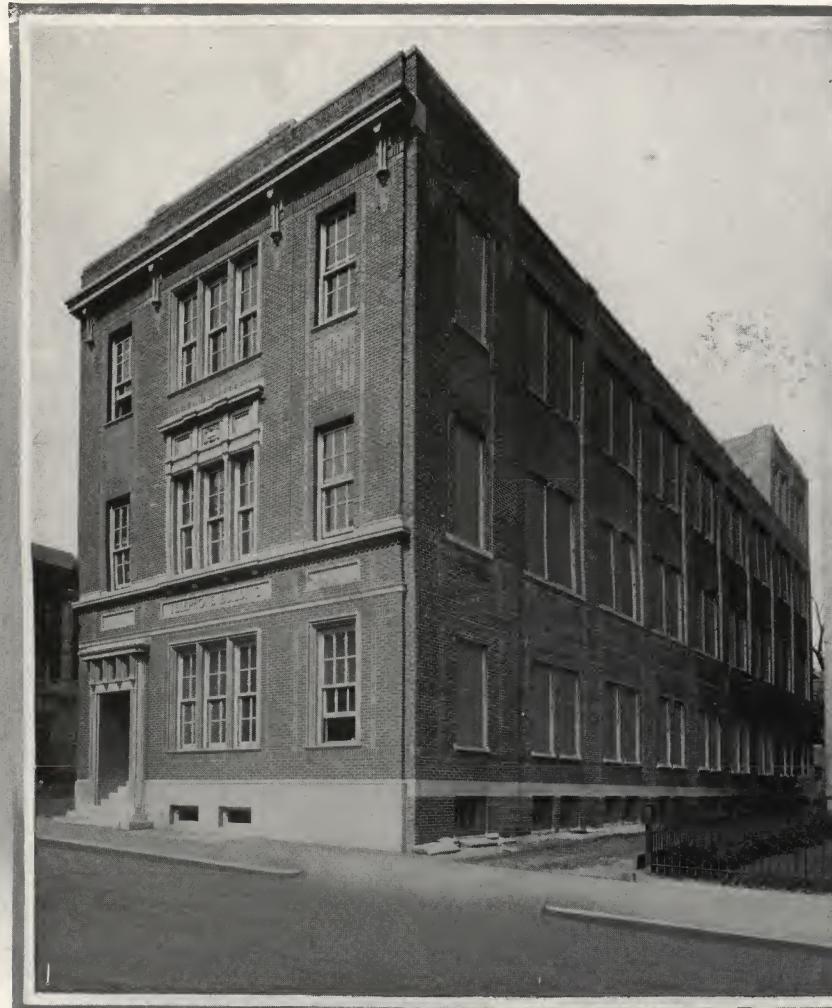
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No. 1. Southern New England Telephone Exchange, Waterbury, Conn. Equipped with type of Shutter shown on Page 40, originally designed to meet the requirements of the American Telephone and Telegraph Company. The walls are especially prepared to receive the shutters. Coil is placed above window head and enclosed in a reveal covered by removable metallic plate. Guides are situated outside the window casing affording protection to the glass. Shutter closes automatically and is easily reset.

No. 2. Davenport Hotel, Spokane, Wash. Windows on side elevation are protected by automatic rolling shutters mounted on face of wall.

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Pacific States Telephone and Telegraph Company, Los Angeles. This is an apt illustration of where the interruption of service would be a greater loss than the destruction of property. Therefore the most efficient fire protection is required. Metal sash glazed with wire glass and Acme No. 7 type of Kinnear Automatic Shutters are employed. Where these retardants are used in combination, the rolling shutters should be placed on the outside, as they withstand higher temperatures than the wire glass.

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Marshall Field Building, Chicago, Ill.—The tendency in the modern department store is to eliminate the solid fire wall with its small doors, and substitute column construction, which facilitates the handling and display of extensive lines of merchandise and conveys a correct impression of the establishment's magnitude. Further, the patrons are enabled to traverse more conveniently from one section to another; but the immense value of the building and contents demand the employment of the most efficient method of fire protection. The two conditions presented are conflicting. In the first instance, extensive areas are required; in the second, the restriction of areas is essential. A feasible solution is offered by the use of column construction, equipped with double steel rolling doors, arranged to operate manually, and close automatically in the event of fire. Thus large areas, divided into small fire sections, are obtained. Where this arrangement is used, small, swinging doors should be provided at each end of a series of rolling doors.



Marshall Field Department Store, Chicago—Views showing fireproof partitions dividing the State Street and Wabash Avenue sections. The types of steel rolling doors in general use, when closing automatically, act with rapidity and force. Such doors, if large, would be dangerous, especially in situations where a great number of people are constantly passing through the openings. To meet these conditions, a special construction has been devised, in which the speed is regulated and the door closes slowly, giving ample time for a person to avoid being struck by it. Adjustment and resetting are conveniently accomplished. All mechanism is enclosed in an iron box, built in the column near the floor. See View No. 2. This construction is not illustrated in the engineering section, and special arrangements are devised for each individual case.

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Boston Store, Chicago, Ill.—View showing doors in fire wall on first floor. These openings are 18 feet 2 inches wide and 20 feet 9 inches high. The same arrangement of doors is repeated on each floor.

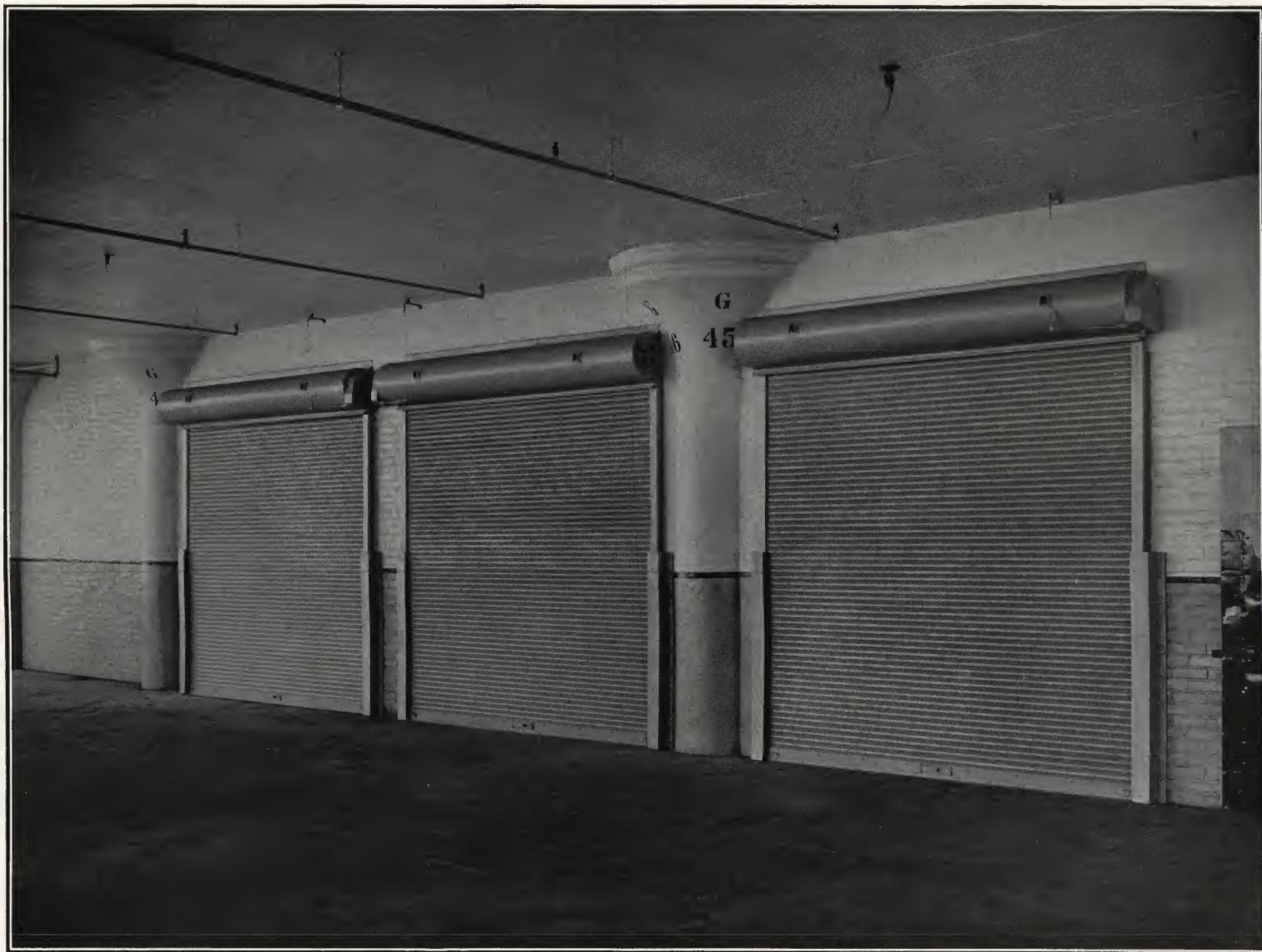


No. 1. Rothschild Building, Chicago, Ill.—View of one of the many openings piercing the fire walls each equipped with two Kinnear Automatic Steel Rolling Doors. Nos. 2 and 3. Mandel Building, Chicago, Ill. Views showing installations of Kinnear Automatic Doors in fire walls.

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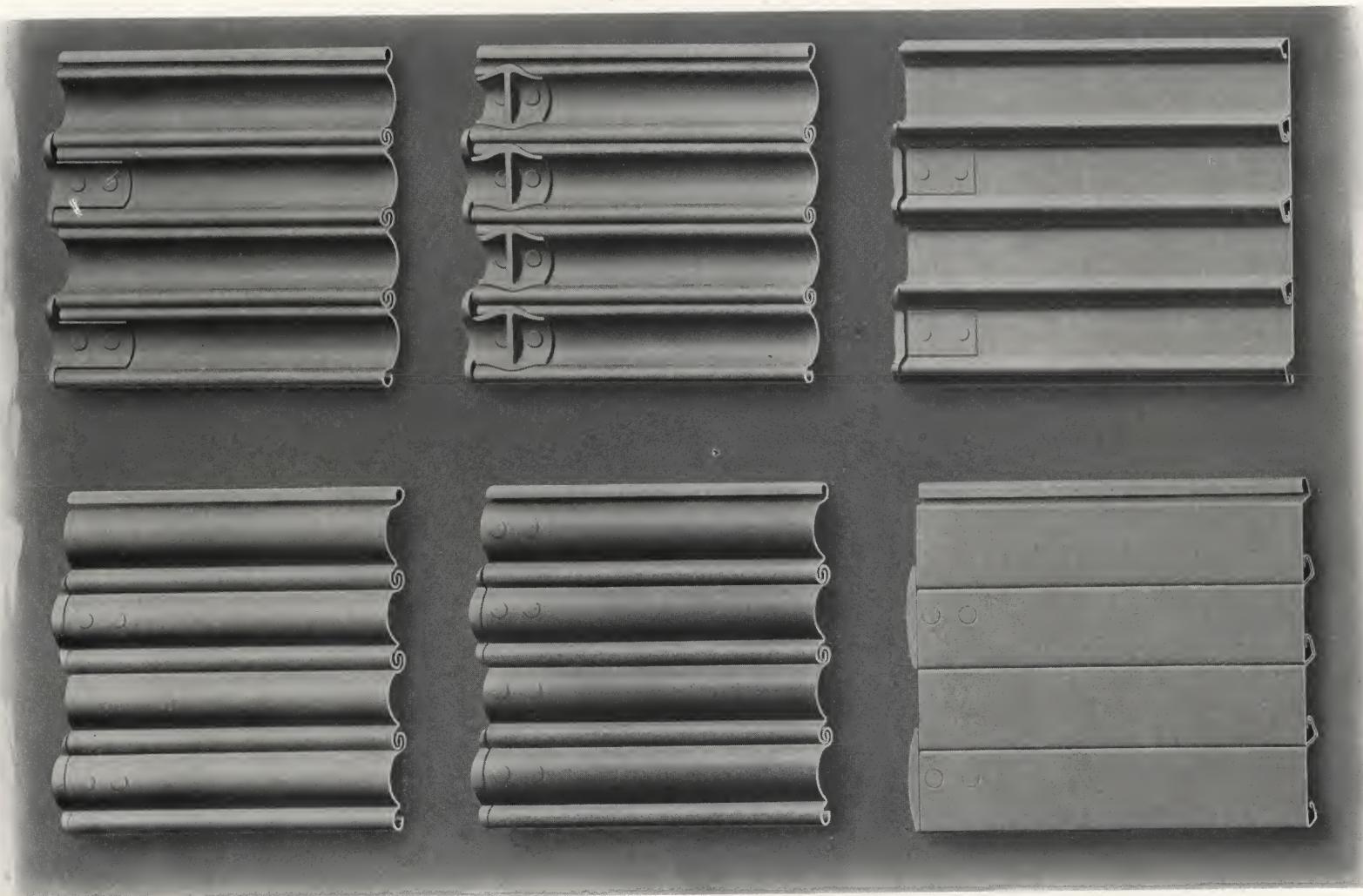


Views of Morgan Memorial, Hartford, Conn.—Kinnear Doors are employed as fire stops throughout this building.



Interior of the Ford Assembly Plant, Philadelphia, showing the openings to elevators equipped with Kinnear Automatic Doors.

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Kinnear Interlocking Slats—Fig. No. 1. Slat No. 2, fitted with alternate endlocks. Fig. No. 2. Slat No. 2, fitted with continuous endlocks. Fig. No. 3. Slat No. 5, fitted with alternate endlocks. Slat No. 2 is $1\frac{1}{4}$ inches wide on centers, $\frac{9}{16}$ inch depth of crown. Slat No. 5 is 2 inches wide on centers, $\frac{5}{8}$ inch depth of crown. Made in Nos. 24, 22, 20, 18 and 16 U. S. Gauges. Slats are made of open hearth steel, endlocks of malleable iron. Joints on the side as presented to the observer, shed water. No. 2 Slat is freely articulated, and best adapted to doors and shutters that are equipped with mechanical operating device. No. 5 Slat for doors that are manually operated by means of handle in bottom bar.

KINNEAR FIRE DOORS AND SHUTTERS



Fig. 1.

Fig. 1. A sectional view through the coil showing the shutter mounting and the baffle plate which prevents the transition of flames and smoke over the coil. Normally this is suspended by fusible connection on outer hood which melts, dropping it to position shown.

The high degree of efficiency of automatic steel rolling doors and shutters as fire stops has been achieved largely by refinement and important auxiliary devices devised and developed by the Kinnear Manufacturing Company.

Attention is called to the following features embodied in the construction of approved doors and shutters:

Fusible washers employed to prevent buckling of rigid members. See illustration.

Automatically controlled baffle plate in hood preventing the passage of flame over coil. See illustration.

Barrel lock affording uniform support to curtain independent of the counterbalance springs.

Special endlocks closing the concave ends of the slats and preventing the passage of flame around edge of curtain.

The enclosure of automatic release protecting it from weather, dirt and the painter's brush.

Eccentric single line contact bearings in releasing levers.

Non-corrodible material used for bearings and contact points of automatic release.

Anti-friction annular roller and thrust ball bearings in barrel mounting, increasing the sensitiveness of the mechanism when automatically actuated.

Manual releasing device, providing a convenient means of testing reliability of automatic closure of shutter.

Easy operation after automatic closure—obtained by a peculiar arrangement of counterbalance.

Increased reliability. Possible failure of automatic closure reduced to a minimum by a device imparting momentarily to the curtain an auxiliary impelling force.



Fig. 2.

Fig. 2. Illustrating the method employed to prevent buckling of rigid members. The groove is attached to wall by bolts in slotted holes, with steel and fusible washers under the head. At a dangerous temperature the fusible washer melts, freeing the groove, allowing it to expand. The several parts composing the groove are assembled in a similar manner.

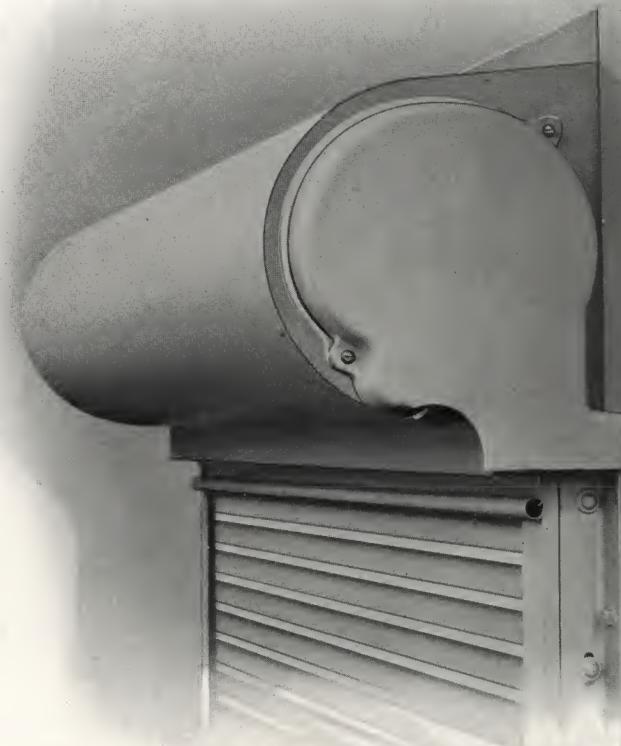


CENTRIFUGAL GOVERNOR.

The governor is enclosed in an extension on the bracket; releasing mechanism on the opposite end.

Governor is geared to the curtain and operates with it. In normal operation it does not resist movement of the curtain, except at, and beyond the critical speed, which is predetermined. In the automatic closing of the curtain, the governor does not become effective until this critical speed is reached. Then the retarding action takes place. It reduces the impact and permits the curtain to close easily upon the sill.

The centrifugal governor requires a considerable overload to actuate it, and does not retard the speed of the curtain at the beginning of its descent. We therefore advise the use of the escapement governor for situations where many people are constantly passing under the door.



ESCAPEMENT GOVERNOR.

The governor and releasing mechanism are enclosed in housing attached to the end of bracket. It is directly connected to barrel, and is the simplest form of mechanical governor. To normal operation, or the raising of the curtain after it has automatically closed, the governor offers no resistance. In automatic closure it controls the descending speed of the curtain. In closing, the governor acts as an alarm; the curtain moves slowly from the beginning and through the entire travel.

It is not dangerous to persons passing through the opening.



Fig. 1.



Fig. 2.

ACME NO. 1 EQUIPPED WITH ESCAPEMENT GOVERNOR.

Fig. 1. Shows door as it appears installed.

Fig. 2. Housing removed, disclosing the releasing mechanism.
For further particulars relative to this type see Page 24.

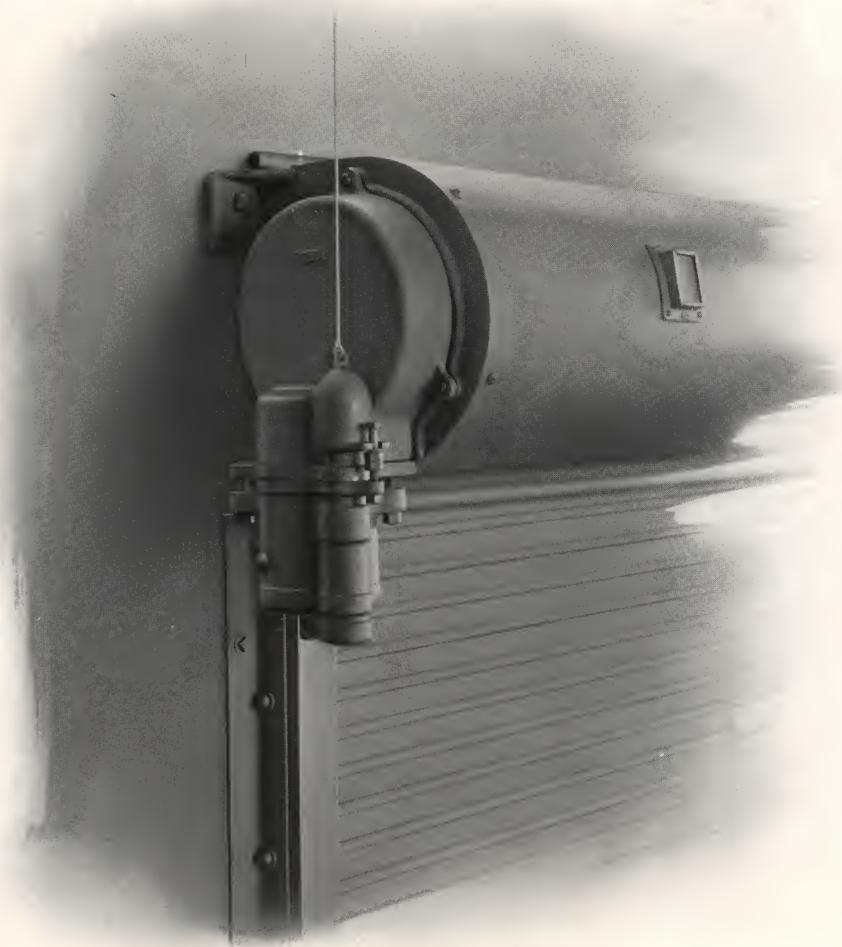
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OIL GOVERNOR.

This type of governor is best adapted to interior installations where it will not be subjected to extreme fluctuations in temperature.

The governor is geared to the door and operates with it. All parts are submerged in oil, free from corrosion.

It is not effective in normal operation of the door, but controls the speed of the descending curtain when it is automatically closed.

The governor offers no resistance to raising the curtain after automatic closure.

Precise adjustment is obtainable with this type and admits of a wide regulation of curtain speed from rapid to slow.



Acme No. 1 Door, equipped with Oil Governor.



ABRIDGED DESCRIPTION OF APPROVED DOORS AND SHUTTERS

Name	Sliding or Rolling	Application	Size of Opening Not to Exceed	Door or Shutter	Single or Double	Wall Mounting	Automatic Closing	Location of Link	OPERATION		Baffle	Reference Page No.
									Kind	Means		
Atlas 1	Rolling	Vertical Shaft*	80 Sq. Ft.	Door	Single	Face of Wall	.....	.....	Manual	Handle	Baffle	22
Acme 1	Rolling	Vertical Shaft*	80 Sq. Ft.	Door	Single	Face of Wall	Automatic	Above Opening	Manual	Handle	Baffle	24
Acme 2	Rolling	Vertical Shaft*	80 Sq. Ft.	Door	Single	In Opening	Automatic	Above Opening	Manual	Handle	Baffle	25
Akbar 1	Rolling	Vertical Shaft*	80 Sq. Ft.	Door	Single	Face of Wall	Automatic	Above Opening	Manual	Handle	Baffle	23
Akbar 2	Rolling	Vertical Shaft*	80 Sq. Ft.	Door	Single	Face of Wall	Automatic	Above Opening	Mechanical	Chain	Baffle	.....
Akbar 3	Rolling	Vertical Shaft*	80 Sq. Ft.	Door	Single	Face of Wall	Automatic	Above Opening	Mechanical	Crank	Baffle	.....
Counter Balance	Vertical Sliding	Vertical Shaft	8' 0" x 10' 0"	Door	Single	Face of Wall Shaft Side	.....	.....	Manual	Handle	.....	26
Semi-Automatic	Vertical Sliding	Vertical Shaft	8' 0" x 10' 0"	Door	Single	Face of Wall Shaft Side	Automatic	.....	Manual	Handle	.....	26
Acme 3	Rolling	Fire Wall	80 Sq. Ft.	Door	Double	Face of Wall	Automatic	Above Opening	Manual	Handle	Baffle	28
Acme 4	Rolling	Fire Wall	80 Sq. Ft.	Door	Double	In Opening	Automatic	Above Opening	Manual	Handle	Baffle	29
Acme 4A	Rolling	Fire Wall	80 Sq. Ft.	Door	Double	In Opening	Automatic	Above Opening	Manual	Handle	Baffle	29
Akbar 4	Rolling	Fire Wall	80 Sq. Ft.	Door	Double	Face of Wall	Automatic	Above Opening	Manual	Handle	Baffle	.....
Akbar 6	Rolling	Fire Wall	80 Sq. Ft.	Door	Double	Face of Wall	Automatic	Above Opening	Manual	Handle	Baffle	.....
Akbar 7	Rolling	Fire Wall	80 Sq. Ft.	Door	Double	Face of Wall	Automatic	Above Opening	Mechanical	Chain	Baffle	30
Akbar 8	Rolling	Fire Wall	80 Sq. Ft.	Door	Double	In Opening	Automatic	Above Opening	Mechanical	Crank	Baffle	31
Ajax	Horizontal Sliding	Fire Wall	80 Sq. Ft.	Door	Double	Face of Wall	Automatic	.....	Normally Open	Crank	Baffle	32
Atlas 2		Exterior Walls	10' 0" x 10' 0"	Door	Single	Interior Face of Wall	.....	.....	Manual	Handle	.....	33
Atlas 3		Exterior Walls	10' 0" x 10' 0"	Door	Single	Interior Face of Wall	.....	.....	Manual	Handle	.....	34
Atlas 4		Exterior Walls	10' 0" x 10' 0"	Door	Single	Interior Face of Wall	.....	.....	Mechanical	Chain	.....	37
Acme 5		Exterior Walls	10' 0" x 10' 0"	Door	Single	Interior Face of Wall	.....	.....	Mechanical	Crank	.....	39
Acme 6		Exterior Walls	10' 0" x 10' 0"	Door	Single	Exterior Face of Wall	Automatic	On Exterior	Manual	Handle	.....	36
Acme 7		Exterior Walls	10' 0" x 10' 0"	Shutter	Single	Interior Face of Wall	Automatic	On Exterior	Manual	Handle	.....	35
Acme 8		Exterior Walls	10' 0" x 10' 0"	Shutter	Single	Exterior Face of Wall	Automatic	On Exterior	Normally Open	Handle	.....	.....
Akbar 9		Exterior Walls	10' 0" x 10' 0"	Door	Single	In Opening	Automatic	On Exterior	Normally Open	Handle	.....	40
Akbar 10		Exterior Walls	10' 0" x 10' 0"	Door	Single	Interior Face of Wall	Automatic	On Exterior	Mechanical	Chain	.....	38
Superior 1	Rolling	Exterior Walls	10' 0" x 10' 0"	Shutter	Single	Exterior Face of Wall	Automatic	On Exterior	Mechanical	Crank	.....	.....
									Normally Open	Handle	.....	42

*Doors for vertical shafts (except counterbalanced and semi-automatic) are also suitable for corridors, room partitions and bridge openings where the distance between the doors exceeds 5 feet.

The Kinnear
COLUMBUSManufacturing Co.
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FIRE DOOR FOR OPENINGS IN VERTICAL SHAFTS, CORRIDORS
AND ROOM PARTITIONS.

—Atlas No. 1—

Approval: Single door mounted on face of wall. Opening not to exceed 80 square feet in area.

Description: This door is manually operated by means of handle in bottom of curtain.

It is not equipped with device for closing the door, but has a baffle plate arranged to automatically close the space between hood and barrel.

The curtain is composed of slats especially designed for manually operated doors.



Fig. 1.

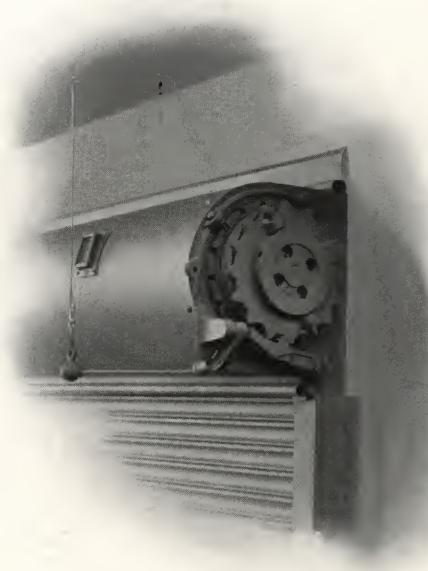


Fig. 2.

FIRE DOOR FOR OPENINGS IN VERTICAL SHAFTS, CORRIDORS AND ROOM PARTITIONS.

—Akbar No. 1—

Approval: Single door mounted on face of wall. Opening not to exceed 80 square feet in area.

Description: This door is manually operated by means of handle in bottom of curtain, and automatically closed by releasing device, actuated by fusible link. It is impelled by powerful starting force, which immediately diminishes and the curtain closes easily upon the sill. A baffle plate automatically closes the space between hood and barrel.

This door is NOT DIFFICULT to operate after it has closed automatically, is EASILY RAISED and will close again unless reset.

Figure No. 1. Door as it appears installed.

Figure No. 2. Mechanism of automatic releasing device.



Fig. 1.



Fig. 2.

FIRE DOOR FOR OPENINGS IN VERTICAL SHAFTS, CORRIDORS
AND ROOM PARTITIONS.

—Acme No. 1—

Approval: Single door mounted on face of wall. Opening not to exceed 80 square feet in area.

Description: Manually operated by means of handle in bottom of curtain, and automatically closed by releasing device actuated by fusible link. It is impelled by a powerful starting force, diminishing after the curtain is set in motion, permitting it to close easily upon the sill. A baffle plate automatically closes the space between hood and barrel.

This door is NOT DIFFICULT to operate after it has closed automatically; can be easily raised and will close again until reset. This is accomplished by raising the levers, inserting a new fusible link, then raising the curtain rapidly.

The Acme is superior to other types, as it admits of better balanced conditions in both normal and automatic operation, and is simpler to reset after automatic closure.

Figure No. 1. Door as it appears installed.

Figure No. 2. Mechanism of automatic release.



Fig. 1.

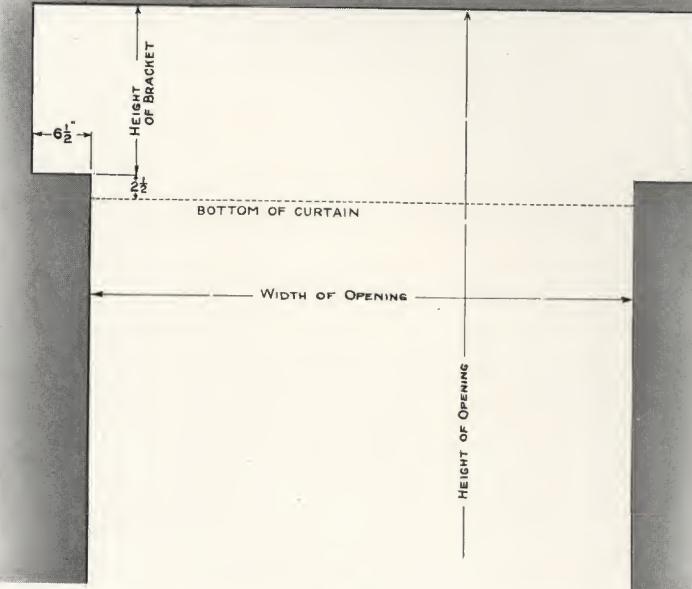


Fig. 2.
FIRE DOOR FOR OPENINGS IN VERTICAL SHAFTS, CORRIDORS
AND ROOM PARTITIONS.

—Acme No. 2—

Approval: Single door mounted in opening not exceeding 80 square feet in area.

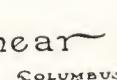
Description: Manually operated by means of handle in bottom of curtain; automatically closed by releasing device actuated by fusible link; it is impelled by a powerful starting force, diminishing after the curtain is set in motion, permitting it to close easily upon the sill. A baffle plate automatically closes the space between hood and barrel.

This door is NOT DIFFICULT to operate after it has closed automatically; can be easily raised, and will close again until reset. This is accomplished by raising the levers, inserting a new fusible link, and then raising the curtain rapidly. The resetting is simple, and can be accomplished by a single person in one to two minutes' time.

Special preparation of the opening is required for this door. Offsets under the lintel in the jambs $6\frac{1}{2}$ inches in depth are necessary for the automatic mechanism; the height to be taken from schedule on Page 43.

Figure No. 1. Door as it appears installed.

Figure No. 2. Elevation of the upper part of opening showing offsets under the lintel.



OHIO U.S.A.



Fig. 1.



Fig. 2.

FIRE DOOR FOR OPENINGS IN VERTICAL SHAFTS.

—Counterbalanced Door—

Approval: Single door mounted on shaft side of the wall; for openings not exceeding 8 feet wide by 10 feet high.

Description: Door is composed of two equal sections operating in vertical guides in opposite directions. The sections are connected together by chains running on ball-bearing sheaves attached to the guides.

The sections are constructed of heavy angle and plate frames, connected at the corners by malleable iron gussets. The covering is sheet steel, ribbed surface.

To facilitate trucking, the upper edge of the lower section is constructed with a heavy plate, which rests upon the sill when the door is open, bridging the space between wall and elevator platform.

This door is furnished in two styles—counterbalanced, and semi-automatic. The counterbalanced is opened and closed manually; the semi-automatic is opened manually, and closed automatically, when the elevator leaves the floor.

The operator stands upright, and is not required to stoop when opening or closing the door. Lifting the handle in the bottom of upper section unlocks the sections. The same movement carries the door to open position.

Figure 1. Interior view of elevator shaft, showing doors mounted.

Figure 2. Shows method employed in bridging space between wall and elevator platform.



Fig. 3.

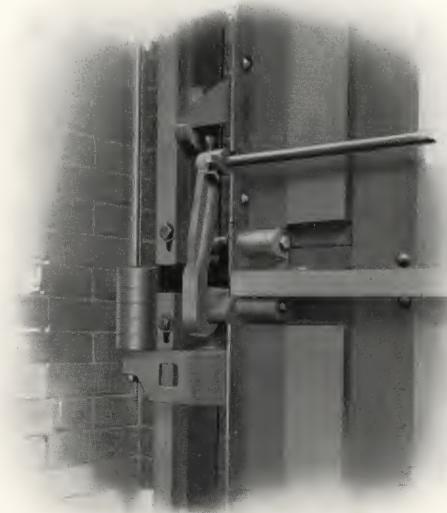


Fig. 4.

Counterbalanced Door shown on this and the opposite page, presents a neat and simple appearance. The illustration is made from an actual photograph.

The door operates with remarkable ease. This is accomplished by operating upon a finished steel bar. It is engaged by trunnions extending from the four corners of each section. This prevents the door from coming in contact with the rough groove that encloses the edge, functioning as a fire seal. The trunnioning permits the sections to adjust themselves to slight irregularities in alignment of guides.

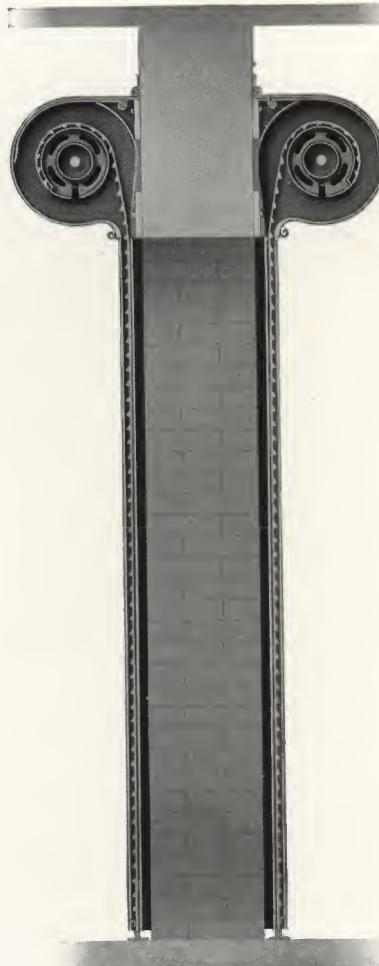
Figure 3. Appearance of door from room side.

Figure 4. Locking mechanism.



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FIRE DOOR FOR OPENINGS IN FIRE WALLS.

—Acme No. 3—

Approval: Double doors mounted on opposite faces of wall.
Opening not exceeding 80 square feet in area.

Description: Manually operated by means of handle in bottom of curtain; automatically closed by releasing device, actuated by fusible link; it is impelled by a powerful starting force, which diminishes after the curtain is set in motion, permitting it to close easily upon the sill. A baffle plate automatically closes space between hood and barrel.

This door is NOT DIFFICULT to operate after it has closed automatically; can be EASILY RAISED and will close again until reset. This is accomplished by raising the levers, inserting a new fusible link, then raising the curtain rapidly.



Fig. 1.



Figure 1. Elevation.
Figure 2. Cross-Section.



Fig. 2.

Figure 3. Opposed Coils.
Figure 4. Superimposed Coils.

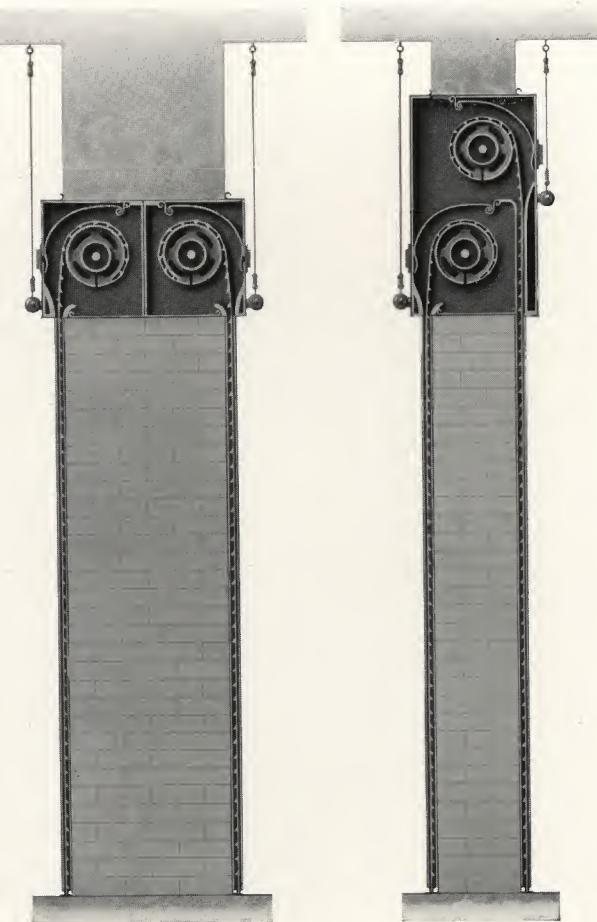


Fig. 3.
FIRE DOOR FOR OPENINGS IN FIRE WALLS.

—Acme Nos. 4 and 4-A—

Approval: Double Doors, mounted in opening not exceeding 80 square feet in area.
Description: Door is manually operated by means of handle in bottom of curtain; automatically closed by releasing device, actuated by fusible link. It has a powerful starting force, which diminishes when door is put in motion; provided with baffle plate, automatically closing space between coil and hood.

This door is NOT DIFFICULT to operate after it has closed automatically, is EASILY RAISED, and will close again until reset. This is accomplished by lifting the levers, inserting a new fusible link, then raising the door rapidly. It is not necessary to remove the hood to reset the levers.

Acme No. 4—Coils are opposed. Acme No. 4-A—One coil is superimposed, which permits its use in walls of less thickness. In other respects, the construction is identical.



Fig. 1.

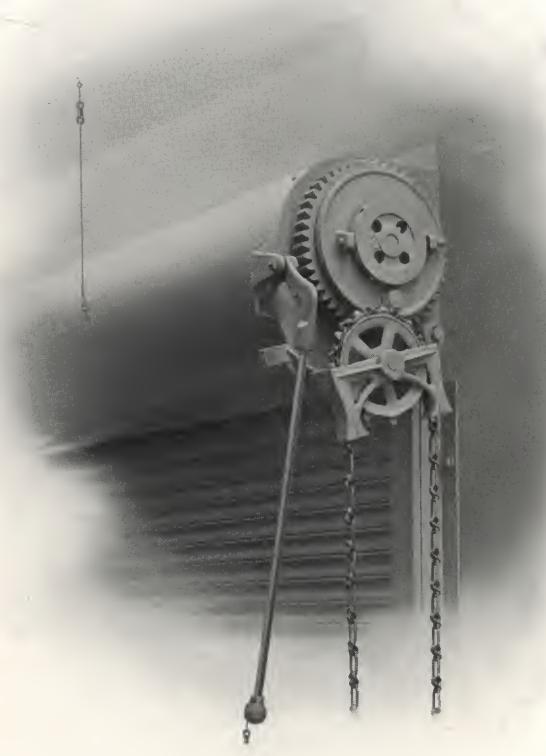


Fig. 2.

FIRE DOOR FOR OPENINGS IN FIRE WALLS.

—Akbar No. 6—

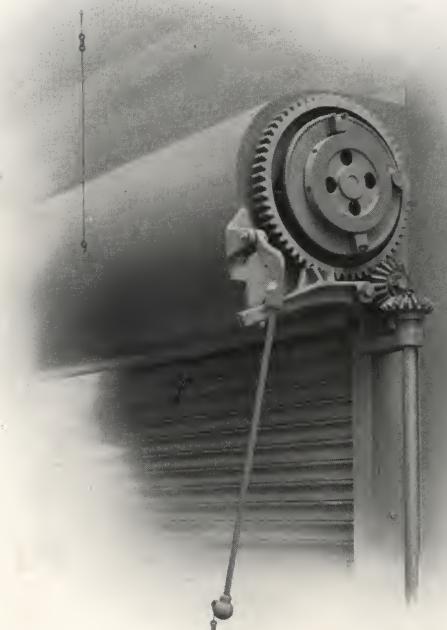
Approval: Double Doors mounted on opposite faces of wall. Opening not exceeding 80 square feet in area.

Description: Door is mechanically operated by means of endless chain, sprocket and compound gear; automatically closed by releasing device, actuated by fusible link. The gear is thrown out of engagement and the door is relieved of the drag of the chain. It has a powerful starting force, diminishing after door is set in motion; also equipped with baffle plate automatically closing space between barrel and hood.

This door is NOT DIFFICULT to operate after automatic closure, but must be reset before it can be operated.

Figure 1. Door as it appears installed.

Figure 2. Release mechanism after automatic closure.



FIRE DOOR FOR OPENINGS IN FIRE WALLS.

—Akbar No. 7—

Approval: Double Doors, mounted on opposite faces of wall. Opening not exceeding 80 square feet in area.

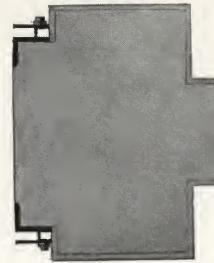
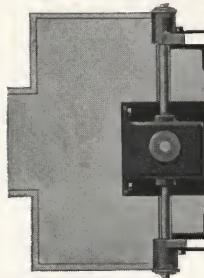
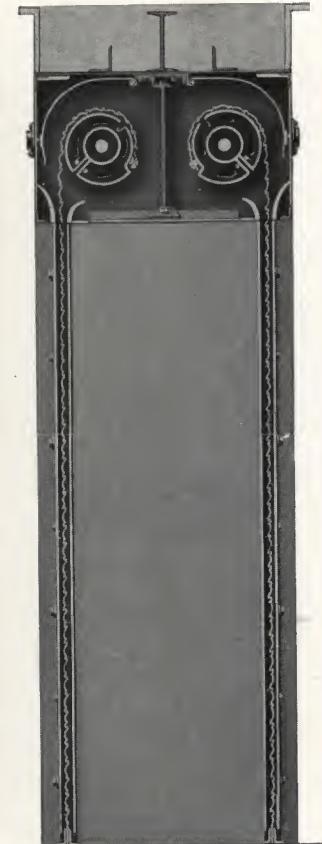
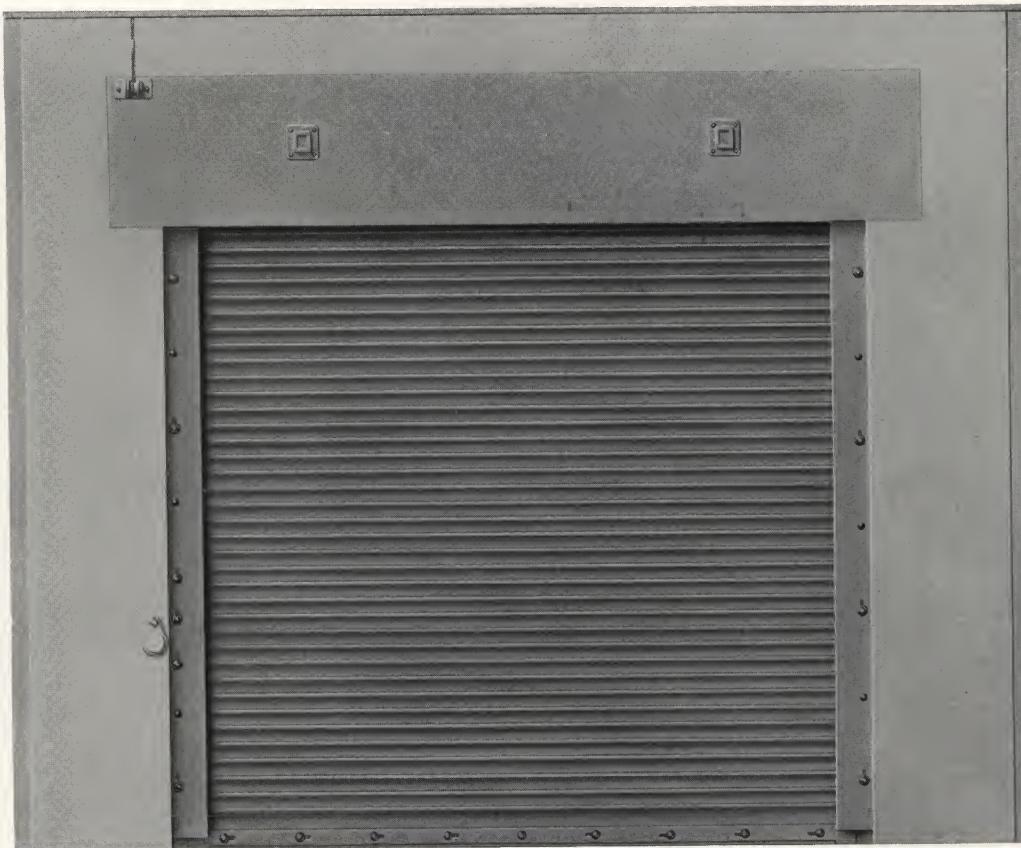
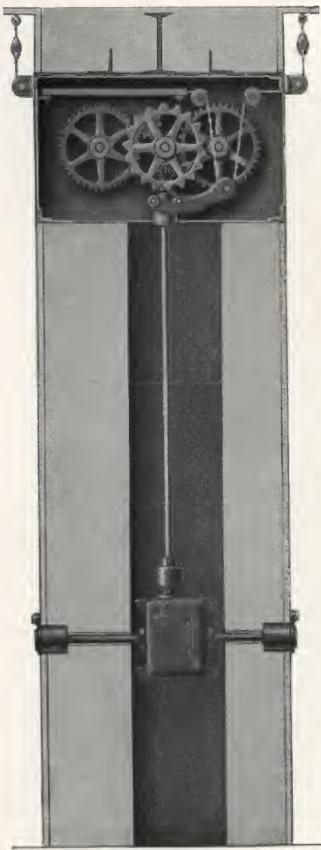
Description: Mechanically operated by means of crank from either side of wall, movement imparted through shaft and gear; automatically closed by releasing device, actuated by fusible link. It has a powerful starting force, diminishing after curtain is set in motion. The gear is not disengaged. Also equipped with baffle plate which automatically closes space between barrel and hood.

This door can be raised after automatic closure WITHOUT DIFFICULTY or resetting, but must be reset before normal operation.



COLUMBUS

OHIO U.S.A.



FIRE DOOR FOR OPENINGS IN FIRE WALLS.

—Akbar No. 8—

Approval: Double Rolling Doors mounted in opening. Opening not to exceed 80 square feet in area.

Description: Door is normally open and automatically closed by releasing device, actuated by fusible link. Curtain is impelled by a powerful starting force, diminishing after it is set in motion.

An escapement governor forms part of the standard equipment and controls the speed of the descending curtain.

Mechanical means of opening are provided, consisting of crank, shaft and gear, which are not disengaged during automatic closure.

This door is NOT DIFFICULT to open after automatic closure and will close again unless reset.



COLUMBUS

OHIO U.S.A.



Terry Lina Co.
Columbus

FIRE DOOR FOR OPENINGS IN FIRE WALLS.

Approval: Ajax. Double sliding doors mounted on both sides of wall. Opening not to exceed 80 square feet in area.

Description: Door is composed of interlocking cellular sections $2\frac{1}{2}$ inches thick assembled on steel frame. Filled with non-combustible material, which does not produce smoke or gas when highly heated. Mounted on track. Overlaps the openings, sides and top.

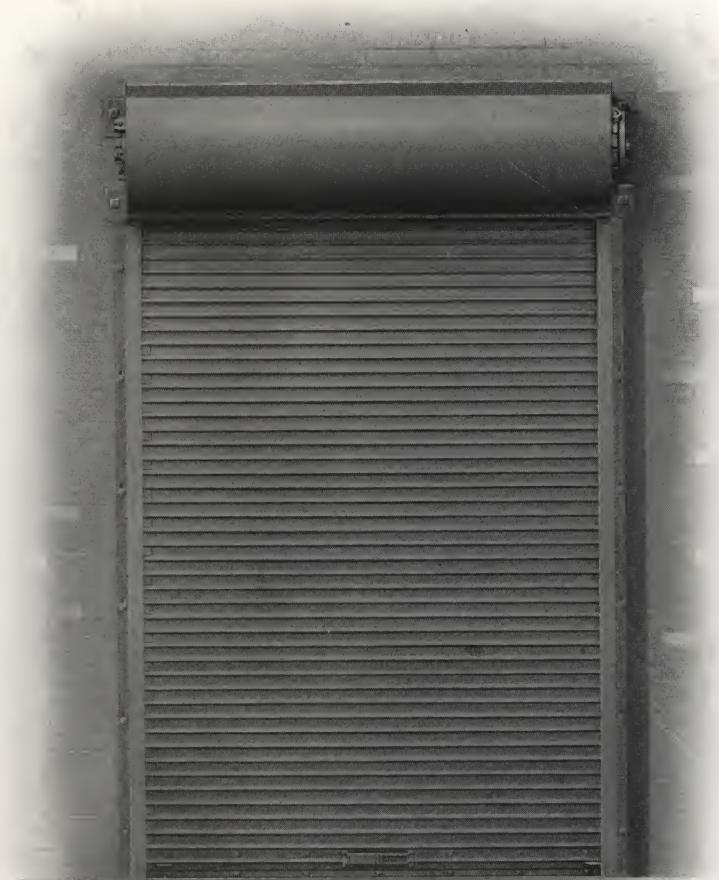
All of the hardware on the door is attached, except the hangers, and holes are provided for these.

Manually operated by means of handles, and automatically closed by weight released by fusible links. As a fire retardent it is absolutely superior to the three-ply, tin-covered fire door generally recognized as standard, and in appearance is a decided improvement. This door has been subjected to fire test of two hours' duration, maximum temperature of 2,550 degrees, followed by application of stream of water, door remaining intact and capable of further resistance.

The Kinnear
COLUMBUS



Manufacturing Co.
OHIO U.S.A.



FIRE DOOR FOR OPENINGS IN EXTERIOR WALLS.

—Atlas No. 2—

Approval: Single Door mounted on interior face of exterior wall. Opening not to exceed 10 feet wide by 10 feet high.

Description: This door is manually operated by means of handle in bottom of curtain; operates with ease and rapidity. It is not equipped with automatic closing device.



FIRE DOOR FOR OPENINGS IN EXTERIOR WALLS.

—Acme No. 6—

Approval: Single Door, mounted on interior face of exterior wall. Opening not to exceed 10 feet wide by 10 feet high.

Description: Door is manually operated by means of handle in bottom of curtain; automatically closed by releasing device, actuated by fusible link. Mounted on exterior face of wall, connecting with the release by chain, passing through wall.

This door is NOT DIFFICULT to operate after automatic closure, is EASILY RAISED, and will close again unless reset. To reset, lift levers, insert a new fusible link, then raise the door rapidly.

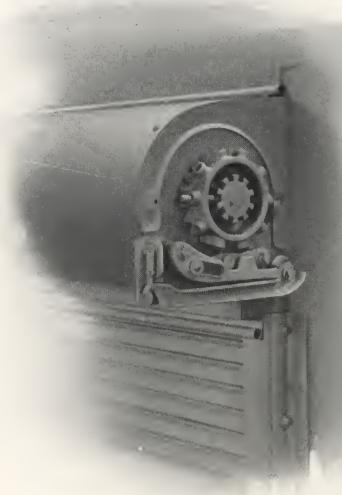
The Kinnear

COLUMBUS



Manufacturing Co.

OHIO U.S.A.



FIRE DOOR FOR OPENINGS IN EXTERIOR WALLS.

—Acme No. 5—

Approval: Single door mounted on exterior face of exterior wall. Opening not to exceed 10 feet wide by 10 feet high.

Description: Door is manually operated by means of handle in bottom of curtain; automatically closed by releasing device, actuated by fusible link. It has a powerful starting force, which diminishes when curtain is set in motion.

This door is NOT DIFFICULT to operate after automatic closure, is EASILY RAISED, and will close again unless reset. This is accomplished by lifting the levers, inserting a new fusible link, then raising the door rapidly.



FIRE DOOR FOR OPENINGS IN EXTERIOR WALLS.

—Atlas No. 3—

Approval: Single door, mounted on interior face of exterior wall. Opening not exceeding 10 feet wide by 10 feet high.

Description: This door is operated mechanically by means of an endless chain, sprocket and gear. It is not equipped with automatic closing device.

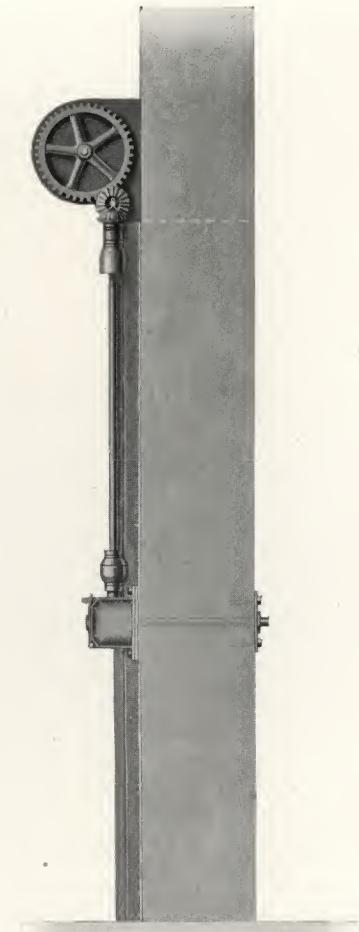


FIRE DOOR FOR OPENINGS IN EXTERIOR WALLS.

—Akbar No. 9—

Approval: Single door mounted on interior face of exterior wall. Opening not exceeding 10 feet wide by 10 feet high.

Description: Door is operated by means of endless chain, automatically closed by releasing device, actuated by fusible link; placed on exterior face of wall and connected with releasing mechanism by chain extending through the wall. In automatic action the gear is disengaged, eliminating friction and drag of the operating chain. This door has a powerful starting force, gradually diminishing as the curtain is uncoiled; closes easily upon the sill and is NOT DIFFICULT to operate after it has closed automatically, but must be reset before it can be operated.



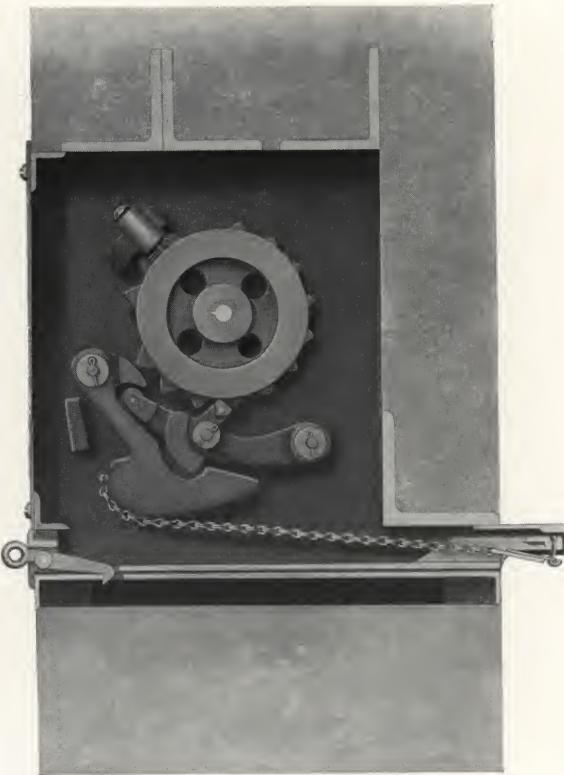
FIRE DOOR FOR OPENINGS IN
EXTERIOR WALLS.
—Atlas No. 4—

Approval: Single door mounted on interior face of exterior wall; opening not to exceed 10 feet wide by 10 feet high.

Description: This door is mechanically operated by means of crank imparting motion to the curtain barrel through shafting and bevel gear; vertical shafting is coupled by universal joints, which correct any irregularities in alignment.

The above illustration shows door operated from both sides of wall; standard arrangement is operated from one side only.

This door is not equipped with automatic closing device.



FIRE SHUTTERS FOR OPENINGS IN EXTERIOR WALLS.

—Acme No. 8—

Approval: For Window Openings—Single shutter mounted in opening, not exceeding 10 feet wide by 10 feet high.

Description: The curtain is coiled on barrel journaled in brackets in recess above window frame. A steel facia covers the recess. The grooves are attached to the brick jambs. An angle closes space between grooves and lintel.

Operation, automatic. This shutter is essentially automatic in its operation; normally open, and closed by releasing device, actuated by fusible link.

A hollow brick built into the wall, provides passage for a chain connecting the link and release. A piece movable horizontally in the brick, carries the fusible link on its outer end; the inner is held by a latch. This permits testing the shutter without fusing the link. By unlatching, the movable piece is forced out, the releasing mechanism opens, and the shutter closes.

To reset the shutter, the piece is forced in until it latches, the curtain is then raised rapidly. Fusible links are renewed by withdrawing the movable piece and attaching the same.

This shutter is NOT DIFFICULT, but easy to operate; it possesses a large starting force, diminishing when the curtain is set in motion. Strikes easily upon the sill. Placement of this shutter is also illustrated on the opposite page.



Fig. 3.

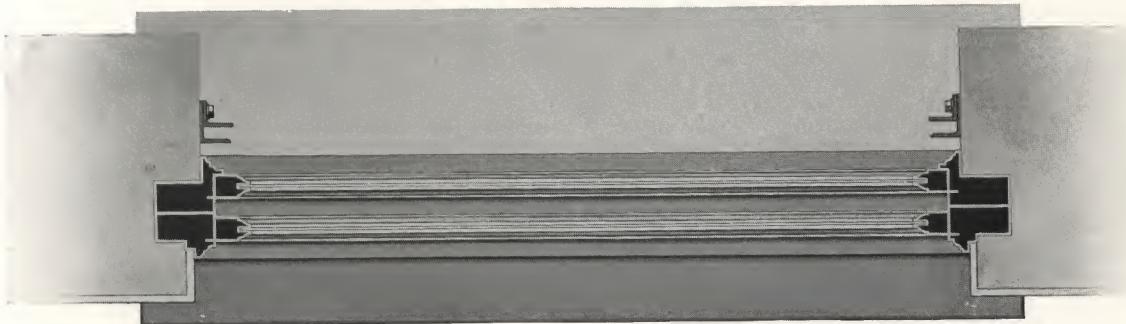


Fig. 4.

Acme No. 8—This construction is very desirable, as it is entirely concealed and does not mar the appearance of the building. Details furnished on application.

Fig. 1. Opposite Page—Exterior view. Shutter as it appears installed. Fig. 2. Opposite Page—Vertical section, through wall, showing mechanism.

Fig. 3. Inside elevation upper portion of window, showing steel facia closing recess. Fig. 4. Horizontal Cross-Section—Showing location of grooves and their relation to window frame. Fig. 5. Vertical section through window.

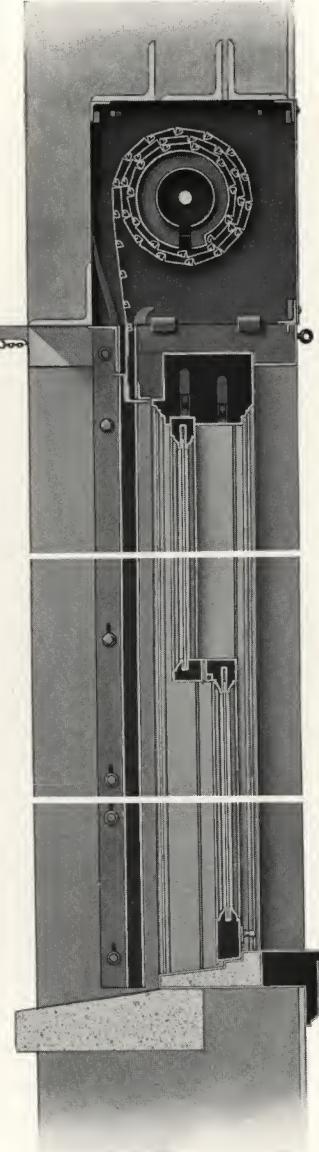


Fig. 5.



FIRE SHUTTER FOR OPENINGS IN EXTERIOR WALLS.

—Superior No. 1—

Approval: For window openings, single shutter mounted on exterior face of wall. Opening not exceeding 10 feet wide by 10 feet high.

Description: Operation, automatic. This shutter is distinctly automatic; normally open, and closed by releasing device, actuated by fusible link. Levers of the release are held in locked position by chain extending through the wall to a detachable fastening within the building. This admits of testing the shutter without fusing the link. In the event of fire, it can be closed by this method without waiting for it to close automatically.

To recoil the curtain, the chain is fastened, the lower sash raised, and the curtain then lifted by the handle half the height of the opening; the lower and upper sash are then lowered and the curtain lifted rapidly, until it stops.

It is NOT DIFFICULT, but easy to operate after it has closed automatically. This type possesses a powerful starting force, which diminishes immediately after the curtain is set in motion. It is equipped with an escapement governor, the curtain closing easily upon the sill.

Figure No. 1. Door as it appears installed.

Figure No. 2. Mechanism of automatic release.

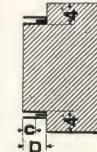
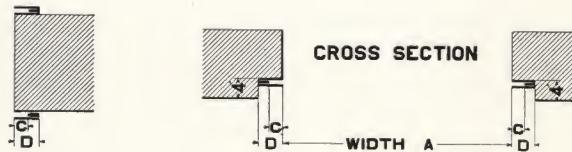
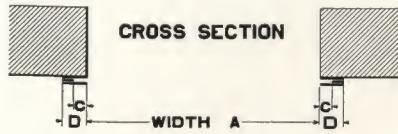
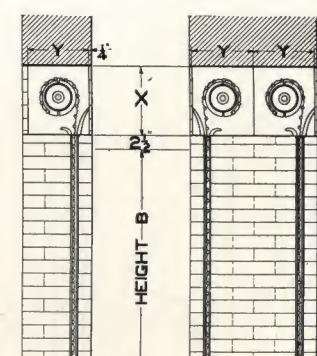
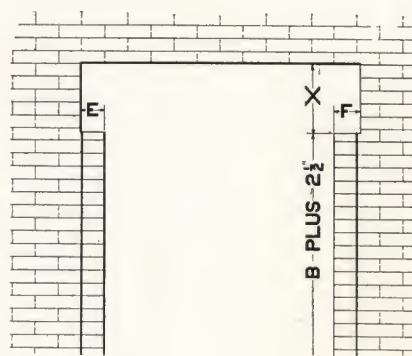
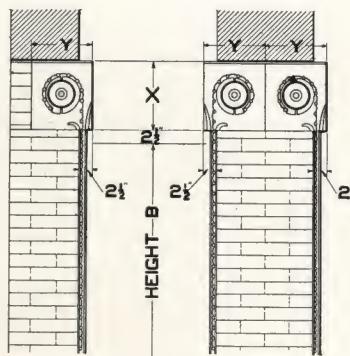
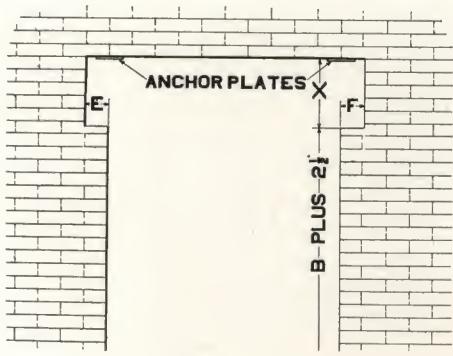


FIG. 1

(Acme Construction.)

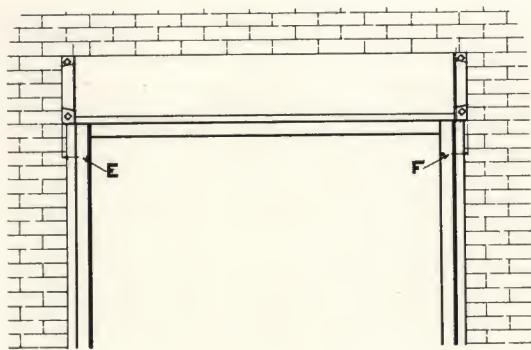
FIG. 2

(Akbar Construction.)

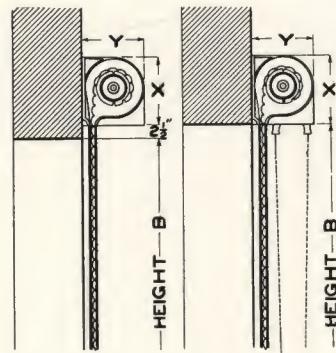
UNDERWRITERS' LABELED DOORS.

Above elevations apply to either single or double doors, of manual operation. Cross-sections and vertical sections are shown for both arrangements. Dimensions listed below include working clearances. Allow $\frac{3}{8}$ in. to (X) dimension, Fig. 2, for anchor plates, in case the lintel is not as wide as the brackets. The dimensions E and F can be reversed. Height "B" is the clear height.

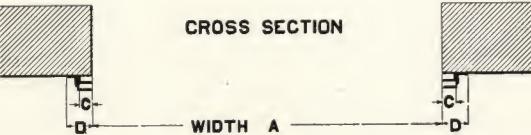
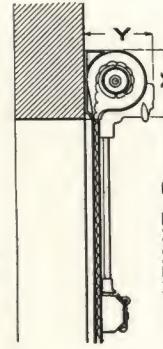
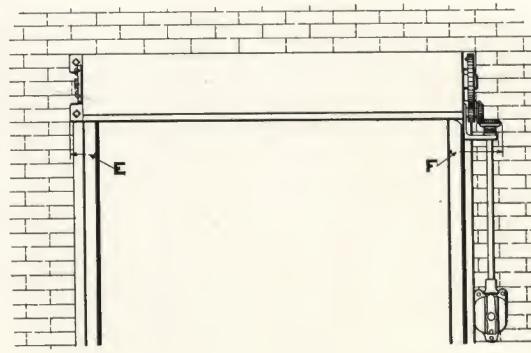
DIMENSIONS FOR SIDE PROJECTIONS						DIMENSIONS FOR X-Y, FIG. 1						DIMENSIONS FOR X-Y, FIG. 2														
Width A	Depth C	Depth D	Width A	FIG. 1		FIG. 2		Height B	No. 2 SLAT		No. 5 SLAT		No. 2 SLAT		No. 5 SLAT											
				FIG. 1	FIG. 2	Width A	Width A		Width A	Width A	Width A	Width A	Width A	Width A	Width A	Width A	Width A									
0'- 4'	2 1/2"	4"	0'- 4'	E	F	6"	6 1/2"	5"	6 1/2"	6 1/2"	6 1/2"	15 1/2"	11 3/4"	16 1/2"	12 3/4"	18"	14 3/4"	15"	12 1/2"	13 1/4"	16 1/2"	14 1/4"	17 1/2"	15 1/4"		
4'- 8'	2 1/2"	4"	4'- 8'	6"	6"	7"	5 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	16 2"	12 3/4"	17"	13 3/4"	17"	14 3/4"	16"	13 1/4"	16 1/2"	14 1/4"	16 1/2"	14 1/2"	17 1/2"	15 1/4"	
8'-10'	2 1/2"	4"	8'-10'	6 1/4"	7 1/2"	6"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	17"	13 3/4"	17"	13 3/4"	19"	15 3/4"	16 1/2"	14 1/4"	16 1/2"	14 1/4"	17 1/2"	15 1/4"	18 1/2"	16 1/4"	
10'-12'	3"	4 1/2"	10'-12'	6 1/2"	8"	6 1/2"	6 1/2"	7"	6 1/2"	6 1/2"	6 1/2"	18"	14 3/4"	18"	14 3/4"	19"	15 3/4"	17 1/2"	15 1/4"	17 1/2"	15 1/4"	18 1/2"	16 1/4"	18 1/2"	16 1/4"	
12'-14'	3 1/4"	4 1/2"	12'-14'	6 3/4"	8 1/2"	7"	7 1/4"					19"	15 3/4"	20"	16 3/4"	19"	15 3/4"	21 1/2"	17 3/4"	18 1/2"	16 1/4"	19 1/2"	17 1/4"	18 1/2"	16 1/4"	
14'-16'	3 1/2"	5"	14'-16'	5"	5"	11"-0"	11"-0"					11"-0"	21 1/2"	17 3/4"	21 1/2"	17 3/4"	21 1/2"	17 3/4"	21"	18 1/4"	21"	18 1/4"	21"	18 1/4"	21"	18 1/4"
16'-20'	4"	5 1/2"						12'-0"				21 1/2"	17 3/4"	21 1/2"	17 3/4"	22"	18 1/4"	21"	18 1/4"	21"	18 1/4"	21 1/2"	18 3/4"	21 1/2"	18 3/4"	



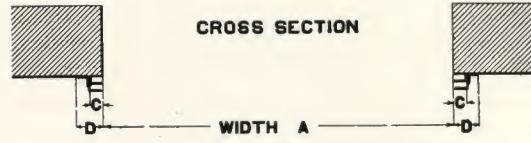
MANUAL



CHAIN



MANUAL AND MECHANICAL (CHAIN) OPERATION



MECHANICAL (CRANK) OPERATION

UNDERWRITERS' LABELED DOORS.

The dimensions listed below include working clearances. The dimensions E and F can be reversed. We do not recommend the manually operated construction for openings of larger area than approximately 100 sq. ft. The mechanical operation should be used on larger sizes.

DIMENSIONS FOR SIDE PROJECTIONS												DIMENSIONS FOR X-Y MANUAL OPERATION						DIMENSIONS FOR X-Y MECHANICAL (CHAIN AND CRANK) OPERATION							
												INTERIOR WALLS			EXTERIOR WALLS			INTERIOR WALLS			EXTERIOR WALLS				
Width A	Depth C	Depth D	CONSTRUCTION	Width A 0' to 4'	Width A 4' to 8'	Width A 8' to 10'	Width A 10' to 12'	Width A 12' to 16'	Width A 16' to 20'	Height B	No. 2 SLAT	No. 5 SLAT	No. 2 SLAT	No. 5 SLAT	Height B	Width A 0' to 10'	Width A 10' to 15'	Width A 15' to 20'	Width A 0' to 10'	Width A 10' to 15'	Width A 15' to 20'				
0'-4'	2 $\frac{1}{2}$ '	4 $\frac{3}{4}$ "	Atlas Manual	5"	5"	5 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	6"	6"	6"-0"	X	Y	X	Y	7'-0"	15 $\frac{5}{8}$ "	16 $\frac{1}{2}$ "	17 $\frac{3}{4}$ "	15 $\frac{5}{8}$ "	16 $\frac{1}{2}$ "	16 $\frac{3}{8}$ "				
4'-8'	2 $\frac{1}{2}$ '	4 $\frac{3}{4}$ "	Akbar Manual	5"	7"	5 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	8"	6 $\frac{3}{4}$ "	8"-0"	14 $\frac{3}{4}$ "	14 $\frac{3}{4}$ "	16 $\frac{3}{4}$ "	14 $\frac{3}{4}$ "	14 $\frac{3}{4}$ "	14 $\frac{3}{4}$ "	8'-0"	15 $\frac{1}{2}$ "	16 $\frac{1}{2}$ "	17 $\frac{3}{4}$ "	15 $\frac{1}{2}$ "	16 $\frac{1}{2}$ "	16 $\frac{3}{8}$ "	
8'-10'	2 $\frac{3}{4}$ '	5 $\frac{1}{4}$ "	Acme 7 Manual	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	16 $\frac{3}{4}$ "	16 $\frac{3}{4}$ "	17 $\frac{5}{8}$ "	16 $\frac{3}{4}$ "	15 $\frac{5}{8}$ "	17 $\frac{5}{8}$ "	9'-0"	17 $\frac{3}{8}$ "	17 $\frac{3}{8}$ "	17 $\frac{3}{8}$ "	16 $\frac{3}{8}$ "	16 $\frac{1}{2}$ "	16 $\frac{3}{8}$ "	
10'-12'	3"	5 $\frac{1}{4}$ "	Oil Release Manual	6 $\frac{3}{4}$ "	8"	7 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	9"	8 $\frac{3}{4}$ "	9"	16 $\frac{3}{4}$ "	16 $\frac{3}{4}$ "	17 $\frac{5}{8}$ "	16 $\frac{3}{4}$ "	15 $\frac{5}{8}$ "	18 $\frac{1}{2}$ "	17 $\frac{1}{2}$ "	18 $\frac{1}{2}$ "	17 $\frac{1}{2}$ "	18 $\frac{1}{2}$ "	18 $\frac{1}{2}$ "			
12'-16'	3 $\frac{1}{2}$ '	5 $\frac{3}{4}$ "	Chain Mechanical	6 $\frac{3}{4}$ "	8 $\frac{1}{2}$ "	7 $\frac{3}{4}$ "	9"	8 $\frac{1}{2}$ "	9 $\frac{1}{2}$ "	8 $\frac{3}{4}$ "	10"	10 $\frac{3}{4}$ "	10 $\frac{3}{4}$ "	11 $\frac{1}{2}$ "	10 $\frac{3}{4}$ "	10 $\frac{3}{4}$ "	18 $\frac{1}{2}$ "	19 $\frac{1}{2}$ "	19 $\frac{1}{2}$ "	19 $\frac{1}{2}$ "	18 $\frac{1}{2}$ "	19 $\frac{1}{2}$ "			
16'-20'	4 $\frac{1}{2}$ '	7 $\frac{1}{4}$ "	Crank Mechanical	6 $\frac{3}{4}$ "	10 $\frac{1}{2}$ "	7 $\frac{3}{4}$ "	11"	8 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	8 $\frac{3}{4}$ "	12"	10 $\frac{3}{4}$ "	10 $\frac{3}{4}$ "	11 $\frac{1}{2}$ "	10 $\frac{3}{4}$ "	10 $\frac{3}{4}$ "	20 $\frac{3}{8}$ "	21"	20 $\frac{3}{8}$ "	21"	19 $\frac{5}{8}$ "	20 $\frac{3}{8}$ "			
										12"-0"	20 $\frac{3}{8}$ "	20 $\frac{3}{8}$ "	21 $\frac{1}{8}$ "	19 $\frac{5}{8}$ "	19 $\frac{5}{8}$ "	19 $\frac{5}{8}$ "	19 $\frac{5}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	20 $\frac{3}{8}$ "	21"	20 $\frac{3}{8}$ "		
																	16 $\frac{1}{2}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	20 $\frac{3}{8}$ "	21"	20 $\frac{3}{8}$ "
																	18'-0"	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21 $\frac{1}{8}$ "	21"	20 $\frac{3}{8}$ "

